interesting case in which hydrostatic pressure is considerably lower than magnetic pressure. In the ranges with expansion the density gradient decreases, and in the ranges of compression it increases. In the ranges with expansion ($f' > 0$) and in the self-simulating waves ($f = 0$) density decreases. In the ranges of the compression ($f' < 0$) density increases until a certain expression written down by the authors becomes negative. As soon as this expression equals zero, a compression shock wave is formed. In a fast magnetic sound wave, the quantities $p_{\parallel}$, $p_{\perp}$, H , $p_{\perp}/p_{\parallel}$ change in the same way as in the magnetic sound wave. The authors then investigate a slow magnetic sound wave. There are two possibilities: (1) In the normal case, density changes in the same way as in a fast magnetic sound wave. Shock waves are formed especially in the ranges of compression, and the self-simulating waves are expansion waves.

(2) In the abnormal case the density gradient decreases in the ranges of compression and increases in the ranges of thinning In the ranges of expansion a shock wave is formed. In contrast to magnetohydrodynamics with scalar pressure, expansion shock waves may form in this case. The authors thank A. I. Akhiyezer and G. Ya. Lyubarskiy for useful discussions. There are 8 references, 5 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physical-technical Institute of the Academy of Sciences, Ukrainskaya SSR) Institut fiziki Akademii nauk Gruz. SSR (Physics Institute of the Academy of Sciences of the Gruzinskaya SSR)

SUBMITTED: April 3, 1959

AKHIYEZER, I.A.; POLOVIN, R.V.; TSINTSADZE, N.L.

[Simple waves in Chew's, Goldberger's and Low's approximations] Prostye volny v priblizhenii Ch'iu, Gol'dbergera i Lou. Khar'kov, Fiziko-tekhn. in-t AN USSR, 1960. Page 57. (MIRA 17:3)

TSINTSADZE, N.L.

Passage of a charged particle through an electron-ion beam
Trudy Inst. fiz. AN Gruz.SSR 7:127-133 '60. (MIRA 14:10)
(Dynamics of a particle)
(Electron beams)
(Ion beams)

S/749/60/007/000/

AUTHORS: Tsintsadze, N. L., and Lominadze, D. G.

TITLE: Determination of the shape of an electron-ion beam in magnetohydr... dynamic approximation.

SOURCE: Akademiya nauk Gruzinskoy SSR. Institut fiziki. Trudy, v.7, 1960, 187-192 (In Georgian, with 2-page Russian résumé).

TEXT: A theoretical determination is made of the shape of a slender axially symmetrical electron-ion beam, the cross-section of which varies along its axis. Earlier papers by other authors had established the possible existence of a stationary state of an electron-ion beam with an uncompensated electric charge, in which the electrostatic repulsive force of the electrons (partly compensated by ions) and the pressure force is balanced by the Lorentz force. The present problem is solved in a magnetohydrodynamic (MHD) approximation, assuming the conductivity of the medium to be infinite, the viscosity zero, the longitudinal force considerably greater than the transverse force (beam radius much smaller than internodular distance), and the motion of the conducting liquid to be adiabatic (insignificant heat-exchange processes). Syrovatskiy's system of MHD equations (Usp. fiz. nauk, v.62, 1957, [illegible]) is solved in the form of power series. A second-order differential equation is

Card 1/2

Determination of the shape of an electron-ion ... S/749/60/007/000/00[illegible]

found relative to the effective radius of the beam. The integral thereof cannot, in general, be evaluated for arbitrary oscillations of the beam relative to its [illegible] radius, but a qualitative assessment shows that the electron-ion beam is in a potential well; the period of oscillation of the beam is expressed in terms of the total energy and the geometric beam parameters. There are 1 figure and 7 references (5 Soviet and 2 English-language, namely: Bennet, W. H., Phys. Rev., v.[illegible] 1934, 830; v.98, 1955, 1584; and Pease, P. S., Ph. Soc., Proc., v. B 70, 1957, [illegible]

ASSOCIATION: None given.

Card 2/2

4244

S/749/60/007/000/[illegible]

AUTHOR: Tsintsadze, N. L.

TITLE: The passing of a charged particle through an electron-ion beam

SOURCE: Akademiya nauk Gruzinskoy SSR. Institut fiziki. Trudy, v.7, 1960. 193-199 (In Russian).

TEXT: This is a theoretical investigation of the energy exchanges between an electron-ion beam and a charged particle passing through it. Such interaction has been employed in the generation of RF microwaves and in particle acceleration. Following an examination of the stability of an uncompensated electron-ion beam relative to small longitudinal electromagnetic oscillations (Polovin, R. V., and Tsintsadze, N. L., ZhTF, v.27, 1957, 2615), the present study examines the passing of a charged particle with constant speed along the axis of an electron-ion beam and also the passing of a charged particle through a beam. The beam is assumed to be axially symmetrical and contained within a cylindrical wave guide with ideally conducting walls. Axial mobility only is stipulated for the electrons and ions, which may be achieved by a strong longitudinal magnetic field. Thus, only longitudinal oscillations are possible. The equations describing the interaction between the charged particle and the beam are shown in linearized form. The energy equation admits a resonance condition which corresponds to the Cherenkov glow, and the

Card 1/2

The passing of a charged particle ... S/749/60/007/000/01[illegible]

wave-guide radius for the maximum intensity of Cherenkov glow is determined for any given frequency. An expression for the energy losses suffered by a charged particle during passing through the beam is determined for the case of a continuous spectrum, including the Cherenkov-glow condition. Thanks are expressed to Prof. A. I. Akhiyezer and Ya. B. Faynberg for valuable advice and guidance. There are 5 Soviet references.

ASSOCIATION: None given.

Card 2/2

S/057/60/030/008/005/019
B019/B060

AUTHOR: Tsintsadze, N. L.

TITLE: The Passage of a Charged Particle or of a Charged Disk Through an Electron-ion Beam

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 8, pp. 913 - 919

TEXT: The author studies the energy loss of a charged particle and of a cluster of particles exhibiting the shape of a disk with uniformly distributed charge density, on its moving at constant velocity along the axis of a relativistic electron-ion beam. The problem is solved in hydrodynamic approximation. The author proceeds from the linearized differential equation system (1) which describes the interaction of a charged particle or of a charged disk with the beam. The following cases are studied: 1) the passage of a charged particle moving along the z-axis at the constant velocity u, through a relativistic electron-ion beam enclosed in a cylindrical waveguide; 2) the same for a waveguide with a radius tending to infinity; 3) the passage of a charged infinitely thin

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disk with a radius equaling the diameter of the waveguide, at a constant velocity along the z-axis; 4) the same for a disk with the finite thickness h. Condition (24) is given for the appearance of Cherenkov radiation, moreover an expression is obtained for the intensity of Cherenkov radiation, and the frequency spectrum is examined. Maximum Cherenkov radiation appears at a given frequency if the waveguide radius obeys to formula (16). The author finally thanks Professor A. I. Akhiyezer and Ya. B. Faynberg for valuable advice, as well as N. A. Khizhnyak for discussions. There are 5 Soviet references.

ASSOCIATION: Institut fiziki AN GSSR Tbilisi (Institute of Physics of the AS Gruzinskaya SSR Tbilisi)

SUBMITTED: February 18, 1960

VC

S/057/60/030/010/005/019
B013/B063

24.2120

AUTHORS: Tsintsadze, N. L. and Pataraya, A. D.

TITLE: Production of Hydromagnetic and Magnetic Cherenkov Waves in a Dilute Anisotropic Plasma

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 10, pp. 1178-1185

TEXT: The authors determined formulas for the power of Cherenkov radiation from mobile sources. A charged filament and several circuits moving with a high velocity served for the production of waves. Equations by Chew, Goldberger, and Low (Ref. 1) were used to derive the above-mentioned formulas. These equations, which are similar to the set of equations of magnetohydrodynamics, are, however, only valid for a plasma moving across the magnetic field. In the present work, they were used to study the production of waves in an anisotropic plasma by means of circuits and a charged filament moving both across and along the magnetic field. It is noted that the results obtained possibly do not hold for the case in which the circuits in the plasma move in the direction of the

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magnetic field. The greatest difference between an isotropic and an anisotropic plasma is that hydromagnetic waves are strongly excited in the latter plasma. This phenomenon is caused by the appearance of anisotropic Alfvèn waves in the medium under consideration. A similar problem was studied by A. I. Morozov (Ref. 4) for an isotropic plasma the circuit of which moves along the external magnetic field. The data obtained by the authors are in qualitative agreement with Morozov's results. The authors thank N. M. Poliyevktov-Nikoladze, Ya. B. Feynberg, A.G. Sitenko, and D. G. Lominadze for discussions. There are 1 figure and 4 Soviet references.

ASSOCIATION: Institut fiziki AN Gruz.SSR, Tbilisi (Institute of Physics AS Gruzinskaya SSR, Tbilisi)

24.6714
24.6712

27165
S/057/61/031/009/005/019
B109/B138

AUTHORS: Tsintsadze, N. L., Lominadze, D. G.

TITLE: Interaction of an ion beam with a magnetically active plasma

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 9, 1961, 1039-1048

TEXT: The authors study the interaction of a cylindrical beam (radius r_0) of charged particles, whose velocity is subject to a thermally conditioned scatter, with an infinite homogeneous electron-ion plasma in the presence of an external constant magnetic field H_0. They give conditions for the excitation of oscillations. (1) Determination of the dielectric tensor ε_{ik}: assumption: beam parallel to $\vec{H}_0$. From the Maxwell equations and the formula $F_\alpha(v,r,t) = f_{0\alpha} + f_\alpha$, $|f_\alpha| \ll f_0$ (A) for the distribution function, one obtains, by integration of the plasma equations of motion, the tensor

$$\varepsilon_{ik} = \begin{pmatrix} \varepsilon & ig & 0 \\ -ig & \varepsilon & 0 \\ 0 & 0 & \eta \end{pmatrix}, \qquad \text{(B)},$$

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Interaction of an ion beam with ...

where

$$\left.\begin{aligned} \varepsilon &= 1-\sum_{\alpha}\frac{\Omega_{\alpha}^2}{2\omega^2}(\omega-ku_{\alpha})\left[\frac{1}{\omega+\omega_{H\alpha}-ku_{\alpha}}+\frac{1}{\omega-\omega_{H\alpha}-ku_{\alpha}}\right],\\ g &= -\sum_{\alpha}\frac{\Omega_{\alpha}^2}{2\omega^2}(\omega-ku_{\alpha})\left[\frac{1}{\omega-\omega_{H\alpha}-ku_{\alpha}}-\frac{1}{\omega+\omega_{H\alpha}-ku_{\alpha}}\right],\\ \eta &= 1-\sum_{\alpha}\frac{\Omega_{\alpha}^2}{(\omega-ku_{\alpha})^2}. \end{aligned}\right\} \qquad (7),$$

k component of the wave vector along $\vec{H}_0$, $\Omega_{\alpha}^2 = \frac{4\pi e^2 n_{\alpha}}{m_{\alpha}}$ (c) $\alpha = 1,2$ type of particles in the beam, $\alpha = 3,4$ type of particles in the plasma, 1,3 ions, 2,4 electrons, $\vec{E},\vec{H}$ wave, $\omega_{H\alpha} = e_{\alpha}H/m_{\alpha}c$, $n_1 = n_2$, $n_3 = n_4$ beam and plasma density, $u_{\alpha}(u_1,u_2,0,0)$. (2) Dispersion equations: assumption: components of the electromagnetic field proportional to $\exp\{i(kz - \omega t)\}$. From the Maxwell equations and the conditions for continuity of the tangential components at the interfaces beam-plasma, the following results for the

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Interaction of an ion beam with ...

transverse oscillations of the plasma:

$$\frac{I_1(\gamma_1 r_0)}{\gamma_1 r_0 I_0(\gamma_1 r_0)} = -\frac{K_1(\gamma_3 r_0)}{\gamma_3 r_0 K_0(\gamma_3 r_0)}. \qquad (17),$$

where

$$\left.\begin{aligned} \gamma_1^2 &= \frac{\omega^2}{c^2}\frac{(N^2-\varepsilon)^2-g^2}{N^2-\varepsilon}, \quad \gamma_3^2 = \frac{\omega^2}{c^2}\frac{(N^2-\varepsilon_0)^2-g_0^2}{N^2-\varepsilon_0}, \\ \gamma_2^2 &= \frac{\omega^2}{c^2}\frac{\eta(N^2-\varepsilon)}{\varepsilon}, \quad \gamma_4^2 = \frac{\omega^2}{c^2}\frac{\eta_0(N^2-\varepsilon_0)}{\varepsilon_0}. \end{aligned}\right\} \qquad (16),$$

$N^2 = c^2k^2/\omega^2$. (3) Ion-cyclotron resonance: (A) Assumption: only ion beam, $gr_o > 1$, temperature distribution of particles isotropic.

Designation: beam components without index, plasma ions index i, plasma electrons index e. (a) If the heat motion is neglected, the following results from (7), (17) for the increment of the wave increase:

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Interaction of an ion beam with ...

$$\frac{\nu}{\Omega} = i\frac{u-V}{uV}\left[\frac{1-\frac{V^4}{c^4}}{\frac{2(u-V)}{V}+\frac{V^2}{c^2}\frac{u-V}{V}-\frac{c^2}{V_{Ai}^2}\frac{(u-V)^3}{u^2V}}\right]^{1/2}, \qquad (25),$$

where $V = \omega/K$ phase velocity of the waves, V_{Ai} Alfvèn velocity. Result: Oscillatory excitation occurs if $u > V$. (b) Considering the heat motion in the plasma, the following holds:

(28).

Result: oscillatory excitation if $u > V$. (c) Ion beams of low density, with thermally conditioned velocity scatter, interaction with "cold" plasma:

(31).

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Interaction of an ion beam with ...

Result: oscillatory excitation at $u > V$, $V \gg V_{Ai}$. (B) Assumption: $kr_0 \ll 1$. (a) Neglecting the heat motion,

$$\frac{\nu}{\Omega} = i\frac{V}{2c}\left[\frac{\frac{\omega_H^2}{V_{Ai}^2(u-V)} + \frac{\alpha_n^2}{2Vr_0^2}}{\frac{\alpha_n^2}{Vr_0^2} - \frac{\omega_H^2 V^3}{2V_{Ai}^4 u^2}}\right]^{1/4}. \qquad (33)$$

holds for $V_{Ai} \gg V$. Result: Oscillatory excitation if

$r_0 < \sqrt{2}\alpha_n \frac{u}{\omega_H}\left(\frac{V_{Ai}}{V}\right)^2$ (D). (b) Considering the heat motion of the plasma particles, the following holds:

$$\frac{\mathrm{Im}\,\nu}{\Omega} = \sqrt{2}\frac{u-V}{c}\left[1 - \frac{1}{4}\frac{(u-V)^2}{\omega_H^2 r_0^2}\alpha_n^2\right], \qquad (35).$$

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Interaction of an ion beam with ...

Result: Oscillatory excitation if $r_0^2 > \frac{1}{4}\frac{(u-V)^2}{\omega_H^2}\alpha_n^2$ (E). (c) Assumptions as under (A) (c);

$$\nu = i\frac{\sqrt{\pi}}{4}\frac{\Omega_i^2}{\Omega_i^2}\frac{u-V}{s}\omega_H\left\{1+\frac{c^2(u-V)^2}{V^4}-\frac{c^2(u-V)}{V^3}\left(\frac{\alpha_n c}{\Omega_i r_0}\right)^2\right\}. \quad (37).$$

Result: Im $\nu > 0$ with $u > V$, and $r_0 > \frac{\alpha_n c}{\Omega_i}\sqrt{\frac{V}{u-V}}$ (F). (4) Low-frequency oscillations, disturbances of magnetohydrodynamic waves ($\omega \ll \omega_{Hi}$) by an ion beam moving through an electron-ion plasma. (A) Assumptions: $\gamma_1 r_0 \gg 1$, $\gamma_3 r_0 \gg 1$. (a) Assumptions: neglecting thermal effects, $\frac{\Omega_i^2}{k^2c^2} \gg \frac{\omega_{Hi}^2}{\omega^2} \gg 1$, $\frac{\Omega^2}{k^2c^2} \gg 1$ and $n < n_i$ (G). Then,

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Interaction of an ion beam with ...

$$\omega = i\Omega \frac{V_{A\parallel}}{c}\left\{\left[1 - \frac{1}{2kr_0}\sqrt{\frac{n}{n_i}}\right]\left(1 - \frac{V_A^2}{u^2}\right)^{-1}\right\}^{1/2}. \qquad (39).$$

Result: Oscillatory excitation with $u > V$. (b) Considering the heat motion in the plasma, and $\frac{\Omega_e^2}{c^2k^2}\frac{V_A}{s} \ll 1$. (H)

$$\frac{\operatorname{Im}\omega}{ks} = \frac{1}{\sqrt{\pi}}\frac{u^3}{u^3 - V_A^3}\frac{\Omega^2}{\Omega_e^2}\left[1 + \frac{1}{2kr_0}\right], \qquad (42).$$

Result: Oscillatory excitation, if $u > V_A$. (c) Assumptions as under (3)(A)(c):

$$\operatorname{Im}\omega' = \frac{\sqrt{\pi}}{2}kV_{A\parallel}\frac{u - V_A}{s}\frac{\Omega^2}{k^2c^2}. \qquad (44).$$

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Interaction of an ion beam with ...

Result: Oscillatory excitation if $u > V_A$. (B) Assumption: $\gamma_1 r_0 < 1$.
(a) Neglecting heat motion of particles. Then,

$$\operatorname{Im}\omega' = \frac{\Omega^2}{c^2}\frac{V_{Ai}(u-V)}{\omega_H}\left(\frac{kr_0}{a_n}\right), \quad (45),$$

where $V = V_{Ai}\alpha_n/r_0$. Result: Oscillatory excitation if $u > V$. (b) Ion beam with thermally conditioned velocity scatter, interaction with "cold" plasma.

$$\operatorname{Im}\omega' = kV_{Ai}\frac{\sqrt{\pi}}{2}\frac{\Omega^2}{c^2k^2}\frac{u-V}{s}\frac{kr_0}{a_n}. \quad (47).$$

Result: Oscillatory excitation if $u > V = V_{Ai}\alpha_n/kr_0$. The authors thank K. P. Stepanov and A. B. Kitsenko for valuable advice. A. I. Akhiyezer, Ya. B. Faynberg, and G. V. Gordeyev are mentioned. There are 12 references: 10 Soviet-bloc and 2 non-Soviet-bloc.

27165
S/057/61/031/009/005/019
B109/B138

Interaction of an ion beam with ...

ASSOCIATION: Institut fiziki AN Gruzinskoy SSR Tbilisi (Institute of Physics AS Gruzinskaya SSR Tbilisi)

SUBMITTED: September 10, 1960

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Card 9/9

30090
S/057/61/031/011/005/019
B104/B108

26.Y331

AUTHORS: Doladze, Ts. D., and Tsintsadze, N. L.

TITLE: Non-linear oscillations of a two-component plasma in a magnetic field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 11, 1961, 1298- 1301

TEXT: Non-linear oscillations of a two-component plasma in a magnetic field perpendicular to the direction of wave propagation are investigated. The plasma pressure is assumed to be small as compared to the magnetic pressure ($p \ll H^2/8\pi$). Neglecting the displacement current, the equations of a one-dimensional plasma motion are given in the form

X

Card 1/4

Non-linear oscillations of a two-...

$$
\begin{aligned}
\frac{\partial H_z}{\partial x} &= -\frac{4\pi e}{c}(n_i v_i - n_e v_e),\\
0 &= \frac{4\pi e}{c}(n_i u_i - n_e u_e),\\
\frac{\partial E_y}{\partial x} &= -\frac{1}{c}\frac{\partial H_z}{\partial t},\\
\frac{\partial E_z}{\partial x} &= 4\pi e(n_i - n_e),\\
\frac{\partial u_e}{\partial t} + u_e\frac{\partial u_e}{\partial x} &= -\frac{e_e}{m_e}E_z - \frac{e}{m_e c}v_e H,\\
\frac{\partial v_e}{\partial t} + u_e\frac{\partial v_e}{\partial x} &= -\frac{e}{m_e}E_y + \frac{e}{m_e c}u_e H,\\
\frac{\partial u_i}{\partial t} + u_i\frac{\partial u_i}{\partial x} &= \frac{e}{m_i}E_z + \frac{e}{m_i c}v_i H,\\
\frac{\partial v_i}{\partial t} + u_i\frac{\partial v_i}{\partial x} &= \frac{e}{m_i}E_y - \frac{e}{m_i c}u_i H,\\
\frac{\partial n_e}{\partial t} &= -\frac{\partial}{\partial x}(n_e u_e),\\
\frac{\partial n_i}{\partial t} &= -\frac{\partial}{\partial x}(n_i u_i),
\end{aligned}
\qquad (1),
$$

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Non-linear oscillations of a two-...

where $\vec{v}_e(u_e, v_e, 0)$ and $\vec{v}_i(u_i, v_i, 0)$ are the electron and ion velocities, respectively; $\vec{E}(E_x, E_y, 0)$; $\vec{H}(0, 0, H_z)$; n_e and n_i are the electron and ion densities. Electron-ion collisions are neglected, and in all equations (except Poisson's equation) plasma is assumed to be quasi-neutral. Under these conditions system (1) can be given as

$$\left.\begin{aligned} \frac{dH}{d\xi} &= \frac{4\pi e n v}{c}, \\ \frac{dE_y}{d\xi} &= \frac{V}{a}\frac{dH}{d\xi}, \\ (u-V)\frac{dv}{d\xi} &= -\frac{e}{\mu}\left(E_y - \frac{uH}{c}\right), \\ (u-V)\frac{du}{d\xi} &= -\frac{evH}{MC}, \\ (u-V)\frac{dn}{d\xi} &= -n\frac{du}{d\xi}, \end{aligned}\right\} \qquad (2),$$

where $M = m_e + m_i$, $\mu = m_e m_i/M$, $v = v_e - v_i$. It is shown that, under given conditions, the general solution which has an oscillatory character

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Non-linear oscillations of a two-...

degenerates to a single pulse. The velocities of non-linear waves and the width of the single pulse are determined. R. Z. Sagdeyev ("Fizika plazmy i problema upravlyayemykh termoyadernykh reaktsiy", v. 4, 384, 1958) is mentioned. There are 4 references: 3 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: D. Bohm a. E. P. Gross. Phys. Rev., 75, 1851 - 1864, 1949.

ASSOCIATION: Institut fiziki AN Gruz. SSR (Physics Institute AS Gruzinskaya SSR)

SUBMITTED: January 9, 1961

Card 4/4

TSINTSADZE, N.L.; LOLADZE, TS.D.

Interaction of shock waves in magnetohydrodynamics. Zhur. tekh. fiz. no.10:1206-1209 O '63. (MIRA 16:11)

LOLADZE, TS.D.; TSINTSADZE, N.L.

Reflection and refraction of magnetohydrodynamic waves on the interface of two anisotropic plasma type media. Zhur. tekh. fiz. 33 no.8:929-934 Ag '63. (MIRA 16:11)

1. Institut fiziki AN GruzSSR.

ANTONOVA, R.A.; BARKHUDAROV, E.M.; ZHVANIYA, B.P.; ROSTOMASNVILI, G.I.; TSINTSADZE, N.L.

Interaction of shock waves. Zhur. tekh. fiz. 33 no.9:1137-1138 S '63. (MIRA 16:11)

ACCESSION NR: AP4024471 S/0141/64/007/001/0094/0100

AUTHOR: Daneliya, I. A.; Tsintsadze, N. L.

TITLE: On the theory of wave interaction in a plasma

SOURCE: IVUZ. Radiofizika, v. 7, no. 1, 1964, 94-100

TOPIC TAGS: plasma, wave interaction in plasma, longitudinal wave interaction, electron ion plasma, oblique wave propagation, nonlinear interaction, interaction frequency, Langmuir frequency, plasma particle flux, plasma current density

ABSTRACT: The fundamental electrodynamic equations are derived for the interaction of longitudinal waves with one another in an electron-ion plasma to which an electric field is applied. It is shown that if the direction of propagation of the longitudinal waves makes some angle to the direction of the translational plasma motion induced by the electric field, then nonlinear interaction between the

Card 1/2

ACCESSION NR: AP4024471

longitudinal waves gives rise to transverse waves. The equations derived for the field in the second-order approximation show that the interaction frequency is double the Langmuir frequency. The equations obtained by M. Sumi (J. Phys. Soc. Japan, v. 15, 1086, 1960) are particular cases of those derived in the present paper. Calculation of the particle flux in the plasma shows that since the mean current density differs from zero in the second approximation, the resultant magnetic field causes the electrons and ions to drift. Orig. art. has: 16 formulas.

ASSOCIATION: None

SUBMITTED: 11Mar63 DATE ACQ: 15Apr64 ENCL: 00

SUB CODE: PH NO REF SOV: 004 OTHER: 002

Card 2/2

ACCESSION NR: AP4039726 S/0141/64/007/002/0262/0272

AUTHORS: Giorgadze, N. P.; Tsintsadze, N. L.

TITLE: On the nonlinear oscillations of a two-component plasma

SOURCE: IVUZ. Radiofizika, v. 7, no. 2, 1964, 262-272

TOPIC TAGS: plasma oscillation, plasma wave absorption, plasma wave reflection, plasma magnetic field interaction, nonuniform rarefied plasma

ABSTRACT: The method of small nonlinearities is used to investigate wave processes that develop in a plasma along an external constant magnetic field. These processes are of interest in view of possible applications of plasma for the generation or amplification of electromagnetic waves. The results obtained in this approximation indicate that the interaction between transverse and plasma waves leads to the occurrence of transverse radiation of the same polarization

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ACCESSION NR: AP4039726

as the linear transverse waves. In the absence of plasma waves, the electromagnetic field is linear in first approximation. Second-approximation longitudinal oscillations are excited both by interaction with Langmuir waves and by interaction with the first-approximation transverse waves. The presence of an external magnetic field affects only the quantitative and not the qualitative results. The physical nature of the interaction of the various waves is illustrated with monochromatic waves in a cold plasma as an example. "The authors thank V. P. Silin for useful remarks and N. M. Poliyevktov-Nikoladze for useful discussions." Orig. art. has: 32 formulas.

ASSOCIATION: Institut fiziki AN GSSR (Institute of Physics, AN GSSR)

SUBMITTED: 14May63 / DATE ACQ: 19Jun64 ENCL: 00

SUB CODE: ME NR REF SOV: 004 OTHER: 004

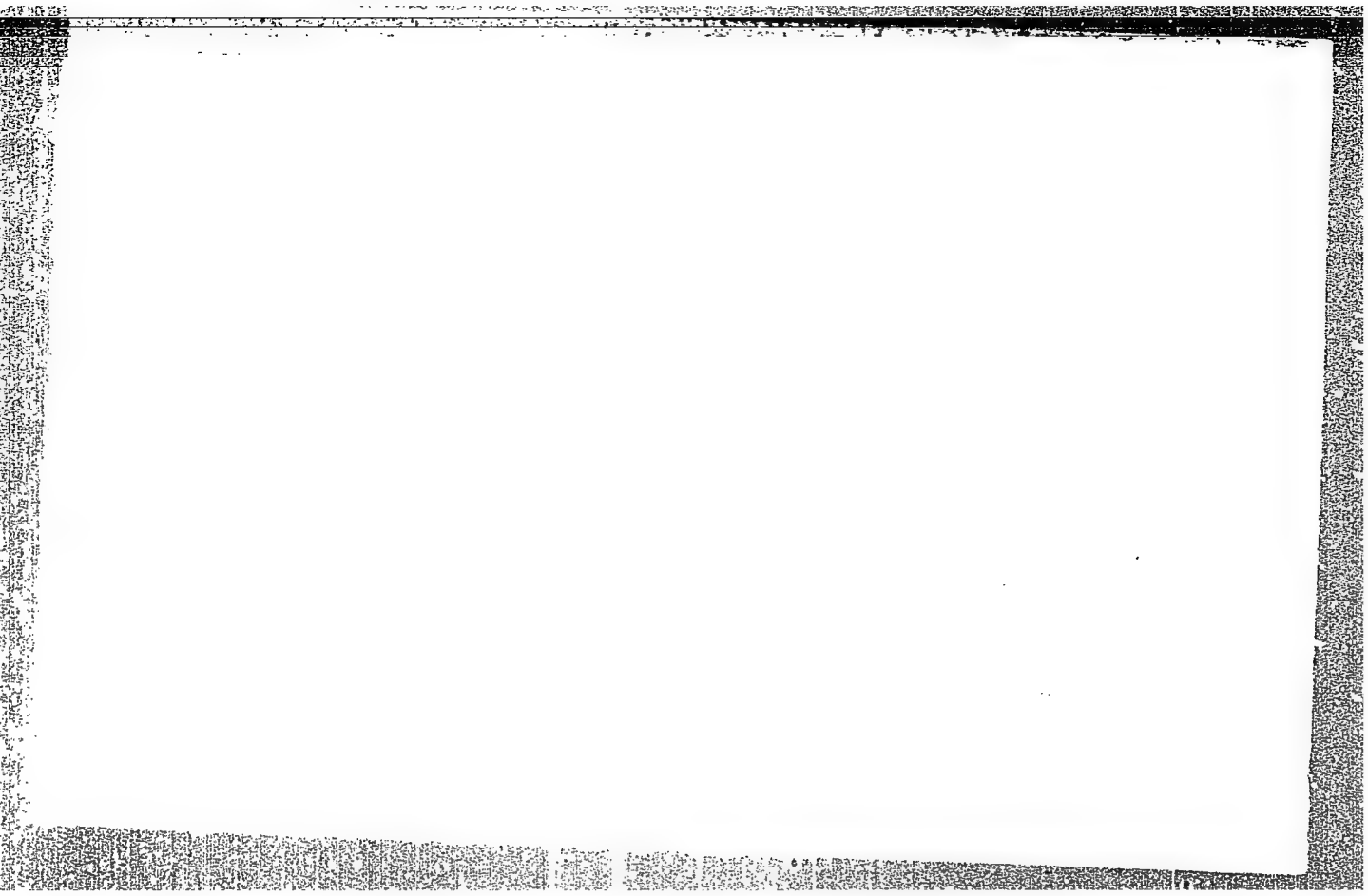
Card 2/2

LOLADZE, TS.E.; TSERTSVADZE, N.L.

Transformation of waves in a nonequilibrium plasma. Izv. vys. ucheb. zav. radiofiz. 7 no.2:374-375 '64 (MIRA 18:1)

LOLADZE, TS.D.; TSINTSADZE, N.L.

Transformation of waves on the interface of two plasma media.
Zhur. tekh. fiz. 34 no.8:1380-1386 Ag '64. (MIRA 17:9)



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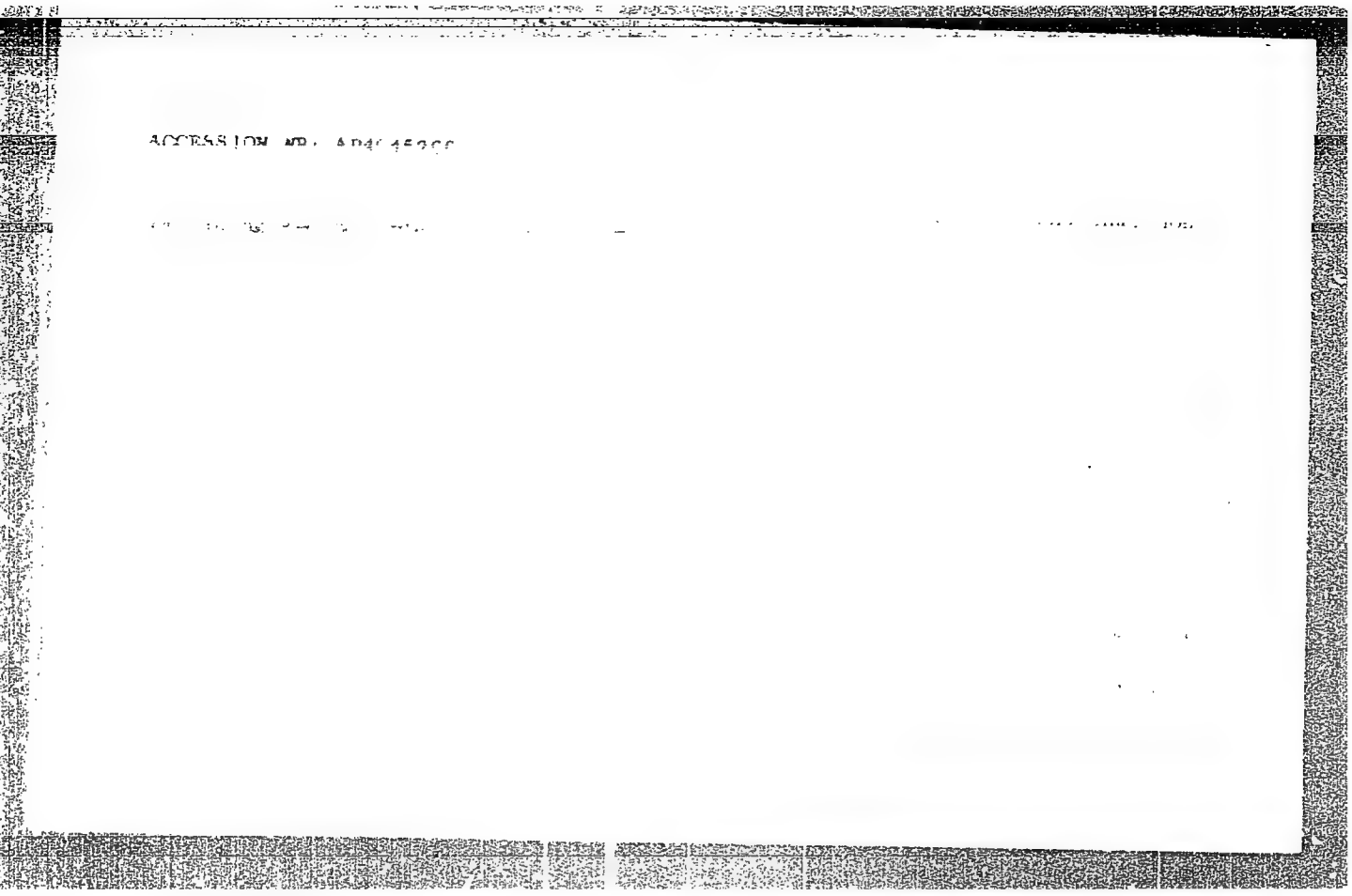

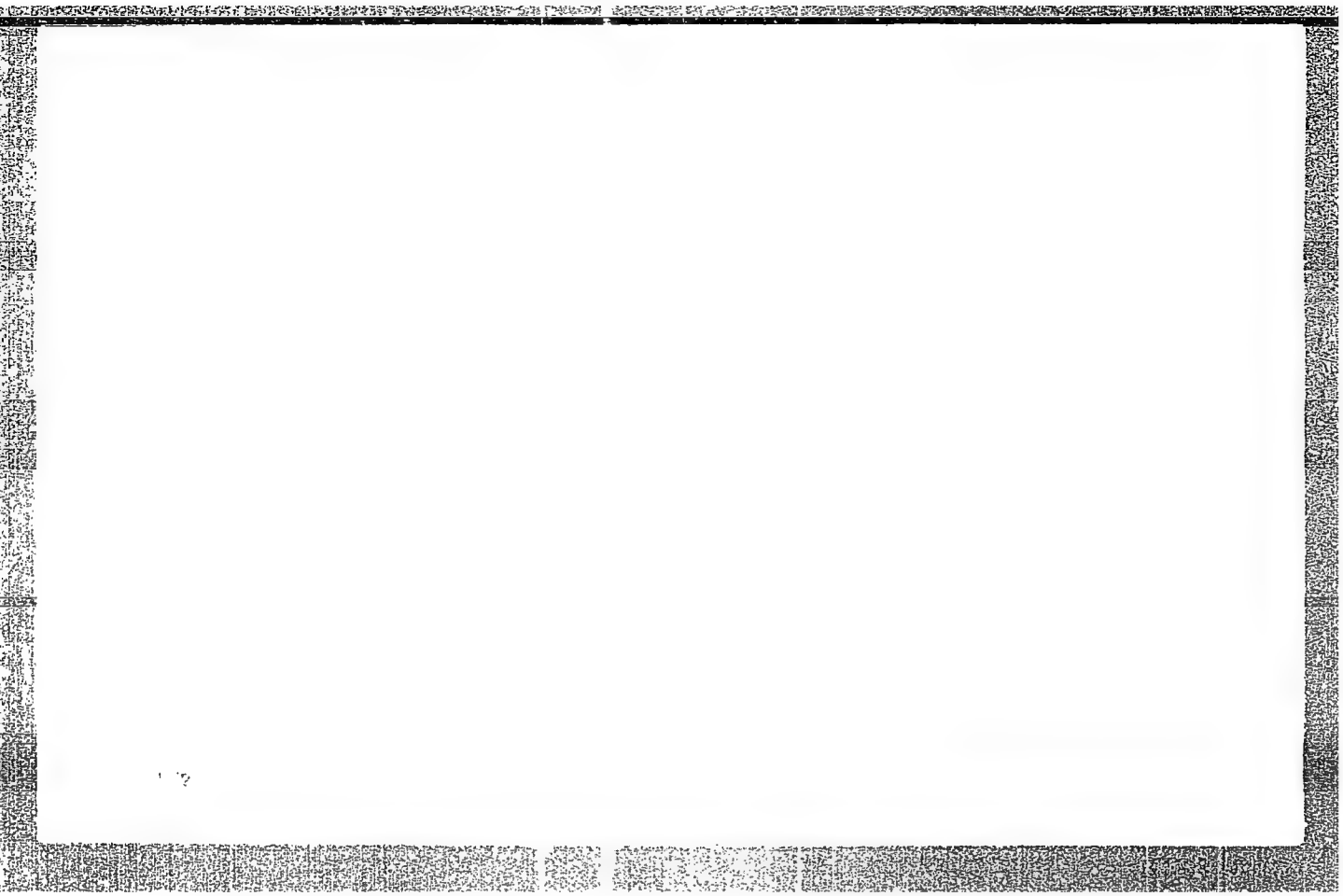

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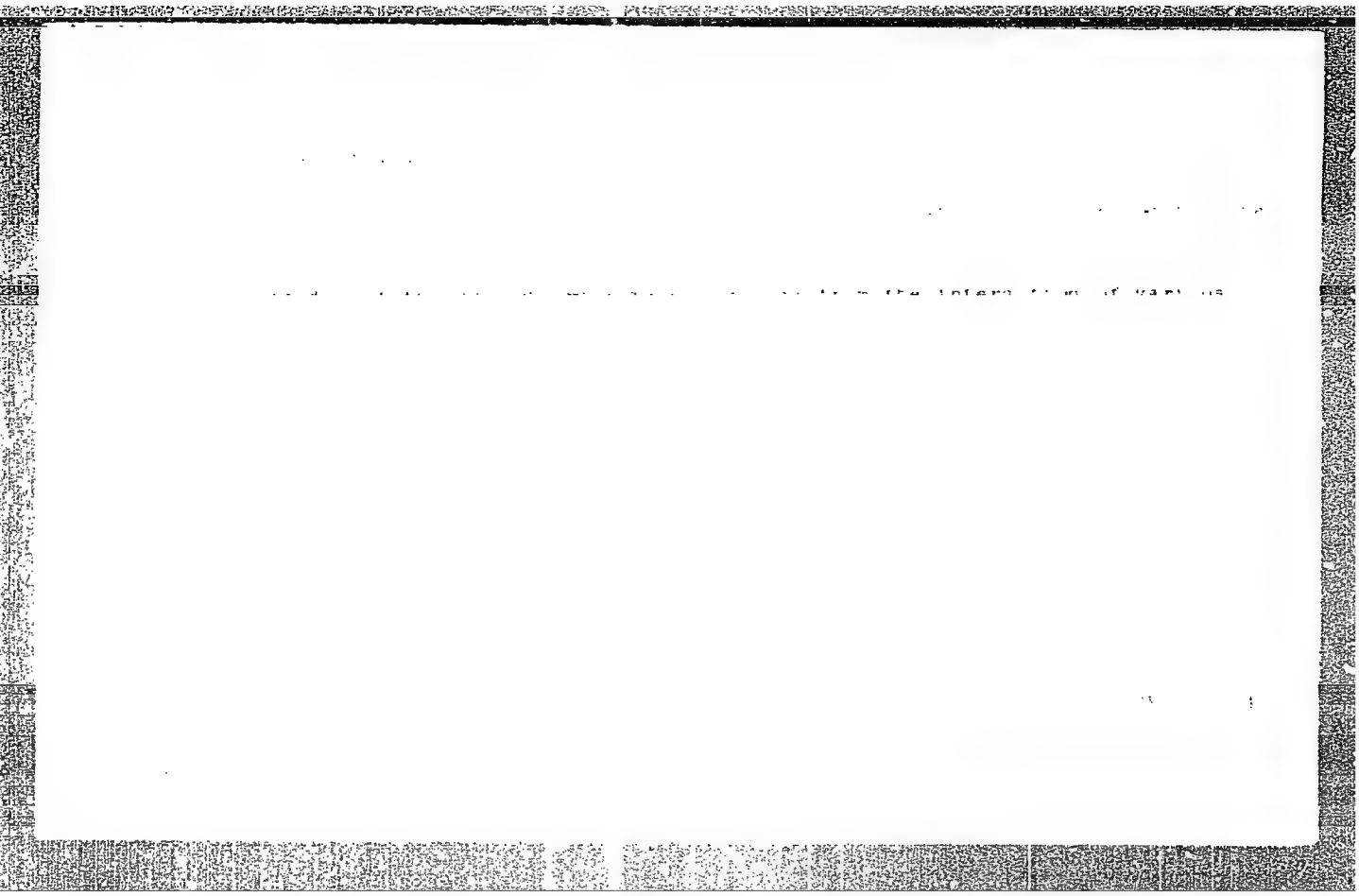

ACCESSION NR: AP4012558 S/0056/64/046/001/0300/0306

AUTHORS: Akhiyezer, I. A.; Daneliya, I. A.; Tsintsadze, N. L.

TITLE: Contribution to the theory of conversion and scattering of electromagnetic waves in a nonequilibrium plasma

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964, 300-306

TOPIC TAGS: plasma, nonequilibrium plasma, nearly unstable plasma, electromagnetic wave scattering, electromagnetic wave conversion, spontaneous emission in plasma, plasma fluctuation waves, plasma external waves, critical plasma fluctuation, nonlinear wave interaction, Doppler scattering

ABSTRACT: The conversion and scattering of electromagnetic waves in a nearly unstable plasma are investigated, with principal emphasis on wave scattering and conversion in which the intensity of the produced radiation becomes anomalously large by virtue of the existence

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ACCESSION NR: AP4012558

of critical fluctuations. The spontaneous emission caused by the scattering of an external longitudinal wave by critical plasma fluctuations and by the transformation of such a wave into a transverse wave is also included. Two cases of nonlinear wave interactions are considered, the passage of a plasma with hot electrons through cold ions and the passage of a fast charged-particle beam through a plasma. The spontaneous emission caused by the conversion of fluctuating longitudinal wave. Only Doppler scattering is included in the analysis of induced scattering of waves by particles." In conclusion we wish to thank A. I. Akhiyezer, V. P. Silin, and A. A. Rukhadze for valuable discussions." Orig. art. has: 30 formulas.

ASSOCIATION: None

SUBMITTED: 21Jun61 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 004 OTHER: 003

Card 2/2

L 36015-66 EWT(1)/T IJP(c) AT

ACC NR: AP6027326 SOURCE CODE: UR/0251/66/041/002/0309/0313

AUTHOR: Tavdgiridze, T. L.; Tsintsadze, N. L.

ORG: Institute of Physics, AN GruzSSR, Tbilisi (Institut fiziki AN GruzSSR)

TITLE: Passage of a fast charged particle through a weakly turbulent magnetoactive plasma

SOURCE: AN GruzSSR. Soobshcheniya, v. 41, no. 2, 1966, 309-313

TOPIC TAGS: magnetoactive plasma, charged particle, fast particle, particle motion, plasma stability, plasma oscillation

ABSTRACT: The authors consider the motion of a fast charged particle passing through a plasma within a constant magnetic field and in which high frequency longitudinal oscillations are excited. A general expression is obtained for the energy loss by a particle in a weakly turbulent plasma, and the loss is evaluated for a turbulent plasma in which the turbulence is due to beam instability. This paper was presented by Academician V. I. Mamasakhlisov on 4 October 1965. Orig. art. has: 11 formulas. [JPRS: 36,456]

SUB CODE: 20 / SUBM DATE: 04Oct65 / ORIG REF: 002

Card 1/1 mcp

L 02284-67 EWT(1) IJP(c) AT

ACC NR: AP6025236 SOURCE CODE: UR/0057/66/036/007/1155/1162

AUTHOR: Tavdgiridze, T.L.; Tsintsadze, N.L.

61
60
B

ORG: none

TITLE: Energy loss in the motion of a charged particle in a weakly turbulent magnetized plasma

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 7, 1155-1162

TOPIC TAGS: turbulent plasma, plasma beam interaction, plasma charged particle, plasma instability, plasma oscillation, plasma wave, nonlinear effect

ABSTRACT: The authors discuss the energy loss of a fast charged particle moving through a weakly turbulent plasma in a constant magnetic field when the velocity of the particle is high compared with the phase velocity of longitudinal (Langmuir) waves. The calculations are based on an expression given by B.B.Kadomtsev and V.I.Petviashvili (ZhETF, 43, 2234, 1964) for the nonlinear correction to the resistivity tensor of the plasma. A general expression is derived for the energy lost by the charged particle in scattering Langmuir waves. This rather involved expression is discussed briefly for the case that the Larmor frequency is approximately equal to the Langmuir frequency, and simple expressions for the energy losses in the limiting cases that the Larmor frequency is much higher or much lower than the Langmuir frequency are derived and

Card 1/2 UDC: 533.9

L 02284-67
ACC NR: AP6025236

tabulated. In these limiting cases there are two types of longitudinal waves with greatly differing frequencies; the expressions for the energy losses are tabulated separately for the four possible cases of scattering of a high or low frequency Langmuir wave into a high or low frequency wave. The most significant losses occur when the ratio of the Larmor to the Langmuir frequencies is high; in this case the loss is proportional to the square of the Larmor to Langmuir frequency ratio. When the Langmuir to Larmor frequency ratio is high the losses associated with scattering of low frequency longitudinal waves into high frequency ones are also high, and are proportional to the fourth power of the Langmuir to Larmor frequency ratio. The authors thank K.N.Stepanov for valuable advice and discussions. Orig. art. has: 27 formulas and 1 table.

SUB CODE: 20 SUBM DATE: 12Jun65 ORIG. REF: 007

Card 2/2 vmb

ACC NR: AP6022074 SOURCE CODE: UR/0141/66/009/003/0489/0496

AUTHOR: Giorgadze, N. P.; Khirseli, Ye. M.; Tsintsadze, N. L.

ORG: Institute of Physics , AN GruzSSR (Institut fiziki AN GruzSSR)

TITLE: Disintegrating interaction of waves in magnetoactive plasma

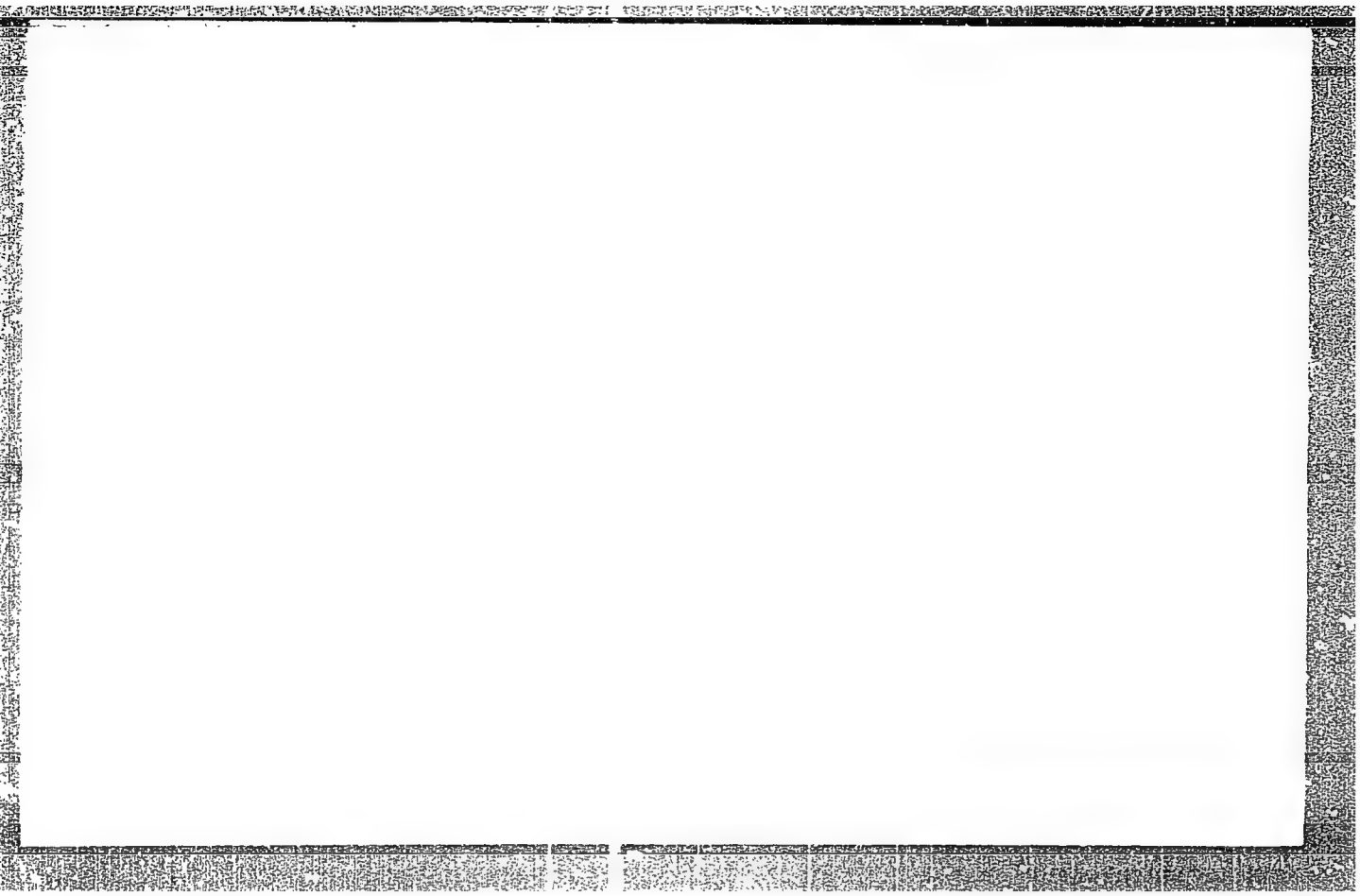
SOURCE: IVUZ. Radiofizika, v. 9, no. 3, 1966, 489-496

TOPIC TAGS: magnetoactive plasma, electromagnetic wave

ABSTRACT: A theoretical study is presented of the disintegrating interaction of waves in a magnetoactive plasma in the simplest case when all wave processes take place along the magnetic field (single-variate problem). The ordinary and extraordinary transverse waves and a longitudinal wave are considered; frequencies of linear transverse waves are assumed to lie far from cyclotron frequencies. The mean power of disintegrating generation, the disintegrating dispersion of transverse waves by longitudinal waves, and the disintegrating transformation of transverse waves into longitudinal waves are considered. Finally, the generation of Langmuir oscillations due to a disintegrating interaction of a helicon with a h-f wave is analyzed. Orig. art. has: 60 formulas.

SUB CODE: 20 / SUBM DATE: 22May65 / ORIG REF: 008

Card 1/1 UDC:621.371.182



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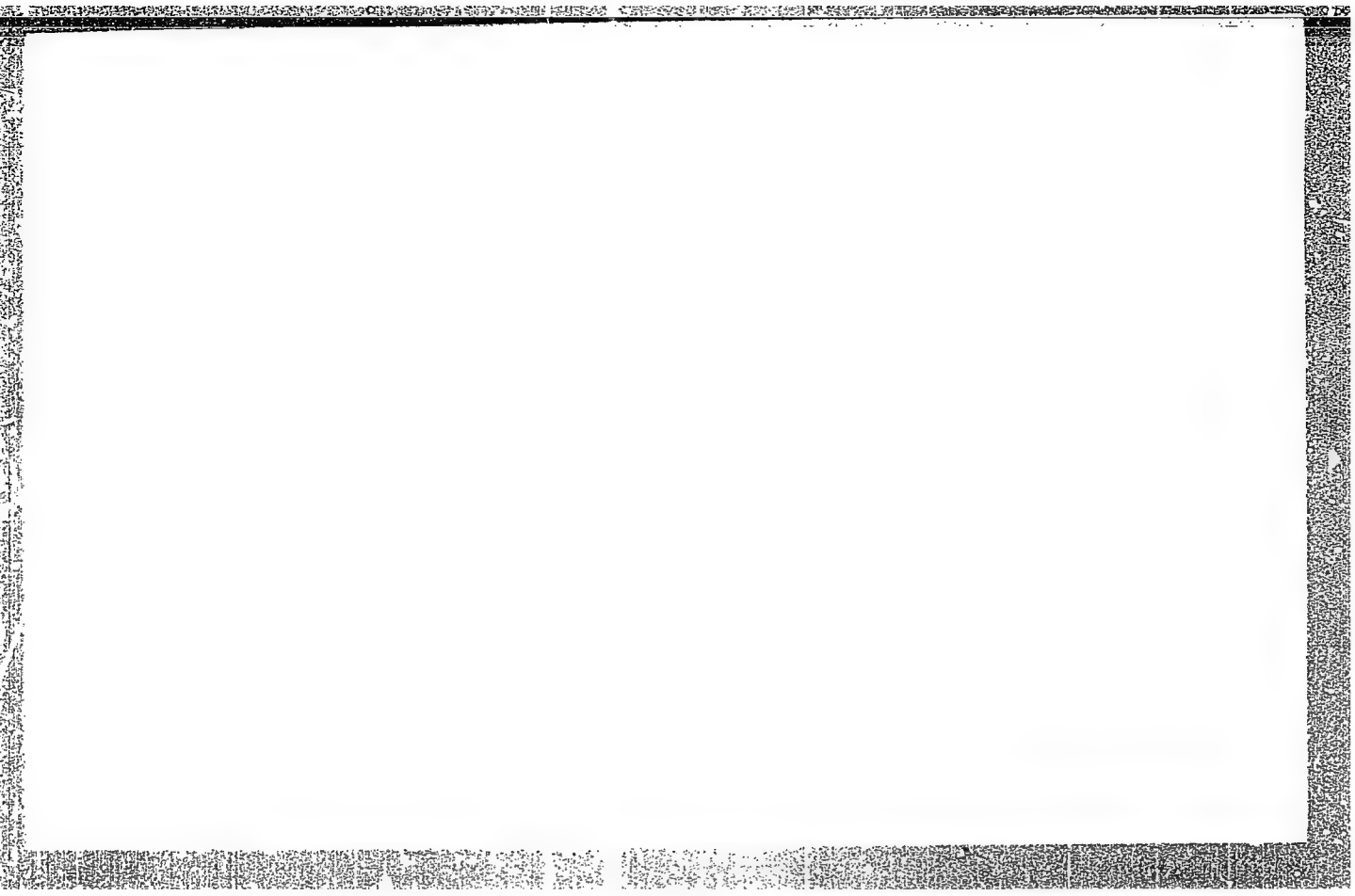

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[illegible], M. E.:

[illegible], M. E.: "The problem of the function of the pancreas in chronic dysentery." Georgian State Publishing House for Medical Literature. Tbilisi State Medical Inst. Tbilisi, 1955. (Dissertation for the Degree of Candidate in Medical Sciences)

Source: Knizhnaya letopis' No. 2, 1956 Moscow

TSIMTSADZE, S.A.

Noncontact induction switch. Priborostroenie no.3:25 Mr '63.
(MIRA 16:6)
(Electric switchgear)

PHASE I BOOK EXPLOITATION SOV/5683

Akademiya nauk Gruzinskoy SSR. Institut elektroniki, avtomatiki i telemekhaniki

Trudy (Academy of Sciences of the Georgian SSR. Institute of Electronics, Automation and Remote Control. Transactions) No. 1. Tbilisi, 1960. 126 p. 500 copies printed.

Ed. A. I. Eliashvili; Deputy Ed.: E. Ualamueridze; Tech. Ed.: A. Thodua.

PURPOSE: This collection of articles is intended for scientists and technical personnel concerned with electronics in general, and machine translations in particular.

COVERAGE: Four out of the nine articles concern machine translation from Georgian into Russian, and vice-versa. Two articles consider general problems of machine translation. The three remaining articles discuss various electronic devices. Articles 1, 3, and 4 are written in Georgian with summaries in Russian. The

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remaining articles are in Russian. No personalities are mentioned. References accompany most of the articles.

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1. Dameniya, M. Ye. Concerning the Analytical Patterns of the Georgian Language for Machine Translations 3

2. Chikoidze, G. B. Concerning the Algorithm of Russian-Georgian Machine Translation 17

3. Gachechiladze, T. G., and A. I. Eliashvili. Statistics of Two-Letter Combinations for the Literary Georgian Language 25

4. Tsertsvadze, G. N., and T. G. Gachechiladze. Process of Letter Distribution in the Words of the Georgian Language 29

5. Kakauridze, A. G. Some Problems in Coding Vowel Sounds 41

6. Imedadze, V. V., and I. P. Paylodze. Registers and Binary Counters Using Ferrites and Transistors 65

7. Imedadze, V. V., and A. G. Lekvinadze. Analysis of the Operation of a Thyratron Changeover Switch 93

8. Tsintsadze, Sh. A. Investigation of a Low-Power Synchronous Generator as the Object of Voltage Regulation During Simultaneous Variation in the Speed of the Set 105

9. Chakhirov, N. S. Concerning the Problem of Calculating Transients in an Induction Drive With Choke Control 115

AVAILABLE: Library of Congress (TK7800.A45A14)

Card 3/3

JP/rsm/ec
10-28-61

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10. p 64 (USSR) SOV/124-58-10-11160

AUTHOR: Tsintsadze, Sh. A.

TITLE: An Investigation of the Functioning of a Low-power Hydraulic Turbine With a Penstock During Changes of Its Speed (Issledovaniye raboty malomoshchnoy gidroturbiny s truboprovodom pri regulirovanii yeye skorosti)

PERIODICAL: Tr. Gruz. politekhn. in-t, 1957, Nr 5 (53), pp 143-152

ABSTRACT: Investigations have been made, with the aid of the method of minor deviations, of certain processes in a hydraulic turbine with a penstock. Final equations are presented in operational form. The law of variation of the opening of the distributor guide vanes in the spiral casing of the turbine has been assumed to be linear with respect to time. The author demonstrates that for the over whelming majority of small hydroelectric power plants and at most medium-power hydroelectric power plants there exists in the penstock a so-called limit water hammer during the closing of the distributor guide vanes of the turbine. In this case, when substituting the expressions given by Allievi for the determination of the relative

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An Investigation of the Functioning of a Low-power Hydraulic Turbine (cont.)

rise in pressure by a certain exponential function, a linear differential equation is obtained which describes the processes in the penstock.

A. I. Loshkarev

LELASHVILI, Sh.G.; KHUNDADZE, T.G.; TSINTSADZE, Sh.A.

Magnetic operative memory device and its input system for control computers. Trudy Inst. elek., avtom. i telem. AN '4:97-114 '63.
(MIRA 17:5)

ACCESSION NR: AT4040444 S/2748/63/004/000/0097/0113

AUTHORS: Lelashvili, Sh. G.; Khundadze, T. G.; Tsintsadze, Sh. A.

TITLE: Magnetic internal memory and its input unit for automatic control computers

SOURCE: AN GruzSSR. Institut elektroniki, avtomatiki i telemekhaniki. Trudy*, v. 4, 1963, 97-113

TOPIC TAGS: computer memory, computer storage device, ferrite memory matrix, magnetic storage, computer input device

ABSTRACT: Two types of internal magnetic memories, with original input units containing ferrites and transistors, were developed at the Institut elektroniki, avtomatiki i telemekhaniki AN GruzSSR. The memories are used in the automatic control for the pressure-rollers of blooming mills. The two memories operate by half-current coincidence and by dynamic magnetization, respectively. A simple and ef-

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ACCESSION NR: AT4040444

fective method for stabilizing the writing currents was obtained for the second variant, with the dependence of the writing-pulse amplitude on the supply voltage eliminated (even if the voltage varies by 50%), and without the use of any stabilized voltages or supplementary elements. The operating principles and the main blocks of both systems are described in detail. The input unit is designed to insert three-digit decimal numbers into the internal memory, but the number of digits can be increased without essential modifications. The input decimal number is set in manually with a telephone dial and is converted sequentially into a binary number by a system comprising blocking-generator pulse shapers and ferrite-transistor flipflops. The logic and the operating sequence of the input unit are described in detail. It is claimed that the simplicity, reliability, and compactness of this internal memory make it suitable for use in many systems for programmed control of manufacturing processes, and the simplicity, reliability, and operating convenience of the input unit make it suitable for use in various computers, particularly of the

Card 2/6

ACCESSION NR: AT4040444

control and information type. Orig. art. has: 17 figures.

ASSOCIATION: Institut elektroniki, avtomatiki i telemekhaniki AN GruzSSR (Institute of Electronics, Automation, and Telemechanics, AN GruzSSR)

SUBMITTED: 00 ENCL: 03

SUB CODE: DP NR REF SOV: 004 OTHER: 000

Card 3/6

TSINTSADZE, Sh.A.

Study of a low-power synchronous generator as an object of voltage control with simultaneous change in the speed of the device. Trudy Inst.elek., avtom.i telem.AN Gruz.SSR 1:105-114 '60. (MIRA 14:6)
(Electric generators)

TSINTSADZE, S.G.

Methods of classifying soluble forms of humic substances. Soob. AN Gruz.SSR 9 no.4:247-251 '48. (MLRA 9:7)

1.Akademiya nauk Gruzinskoy SSR, Institut pochvovedeniya, agrokhimii i melioratsii, Tbilisi. Predstavlene chlenom-korrespondentom Akademii M.N.Sabashvili.
(Humus)

TSINTSADZE S.G.

Country : USSR J
Category: Soil Science. Soil Biology.

Abs Jour: RZhBiol., No 14, 1958, No 63038

Author : Tsintsadze, S.G
Inst : Soil Science Institute, Georgian SSR A.S.
Title : Composition of the Humus of Several Georgian Soils

Orig Pub: Tr. In-ta pochvoved. AN GruzSSR, 1956, 7, 73-81

Abstract: The results are presented of a study of the composition of humus of Shirakskaya steppe chernozem, meadow chernozem-type soil of the Bazalet plateau, brown forest and humus-carbonate soil from the Dushet region, krasnozem from the Laytura tea state farm and podzolic soil from Ingira. Data on the content of humic and fulvic acids and insoluble residue in the soils are examined. There is sub-

Card : 1/2

Country : USSR
Category: Soil Science Soil Biology.

J

Abs Jour: RZhBiol., No 14, 1958, No 63038

mitted also the spectral property of light absorption in Na humate solutions of Shirak chernozem and krasnozem from Layture -- P.V. Shramko

Card : 2/2

L 39962-66 EWT(m)/EWP(t)/ETI IJP(c)

ACC NR: AP6018959 (A) SOURCE CODE: UR/0066/66/000/006/0035/0037

AUTHOR: Tsintsadze, T. D.; Sheffer, A. P. (Candidate of Technical Sciences) 24 B

ORG: All-Union Scientific Research Institute of the Meat Industry (Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti)

TITLE: Change in the quality of quick-frozen semifinished pork products

SOURCE: Kholodil'naya tekhnika, no. 6, 1966, 35-37

TOPIC TAGS: pork, food preservation, freezing, PACKAGING TECHNIQUE, FOOD

ABSTRACT: Changes in the quality of quick-frozen pork fillets during their cold storage were studied by determining the effect of packaging methods, equipment and methods of packing, temperature conditions, and duration of storage on the organoleptic indices. The temperature conditions were found to have a greater effect than the packing methods. Quick-frozen pork fillets packed individually or in lumps had organoleptic indices equal to those of refrigerated fillets, and the consistency of frozen fillets was better than that of refrigerated ones. The quality of quick-frozen semifinished products wrapped in moisture-proof polymer materials (polyethylene, laminated cellophane-polyethylene films) does not decrease after several months of storage. The normal storage period for high-quality semifinished portioned products wrapped individually in polyethylene at -18°C is six months; for products in lumps at -18°C and

Card 1/2 UDC: 637.52.03:15.004.4

ACC NR: AP6018959 O

vacuum-packaged portioned products at -18°C, eight months; for portioned products in polyethylene at -28°C, ten months, and when vacuum-packaged, one year. Orig. art. has: 3 figures and 1 table.

SUB CODE: 06/ SUBM DATE: none

Card 2/2

KOZLOV, A.A.; KOTLYAREVSKIY, D.I.; ROYNISHVILI, N.N.; TATALASHVILI, N.G.; TSAGARELI, E.I.; TSINTSBADZE, A.I.; TSINTSADZE, V.D.; DZIDZIGURI, R.I.

Method of studying tracks in the Wilson magnetic chamber. Soob. AN Gruz. SSR 19 no.2:143-150 Ag '57. (MIRA 11:3)

1. Institut fiziki AN GruzSSR, Tbilisi. Predstavleno akademikom E.L. Andronikashvili.

(Cloud chamber)

TSINTSADZE, V.I.

Water adaptometric test in glaucoma. Soob.AN Gruz.SSR 26 no.1:109-114 Ja '61. (MIRA 14:3)

1. Tbilisskiy institut usovershenstvovaniya vrachey. Pedrstavleno akademikom A.P. Tsulukidze.
(GLAUCOMA)

TSINTSADZE, V.I., kand. med. nauk

State of the vessels of the fundus oculi in atherosclerosis. Sbor. nauch. trud. SOGMI no.14:163-169 '63. (MIRA 18:9)

1. Iz kafedry glaznykh bolezney (zav. - dotsent N.I. Beradze) Tbilisskogo gosudarstvennogo instituta usovershenstvovaniya vrachey i Institut klinicheskoy i eksperimental'noy kardiologii AN Gruzinskoy SSR.

TSINTSADZE, V. I.

TSINTSADZE, V. I. -- "The Effect of Various Intensities of Bright Light on the Internal Eye Pressure of Glaucoma Patients." Tbilisi State Med Institute, Georgian Medical Publishing House, Tbilisi, 1956. (Dissertation for the Degree of Candidate of Medical Sciences)

SO: Knizhnaya Letopis' No 43, October 1956, Moscow

TSINISADZE, V.I.

854. INFLUENCE OF WHITE LIGHT OF DIFFERENT BRIGHTNESSES ON THE INTRA-OCULAR PRESSURE IN GLAUCOMA PATIENTS (Russian text) - Tsintsadze V.I. - SBORN. INFORM. -METOD. MATERIAL. INST. 1956, 4 (27-36)

The influence of different brightnesses and periods of exposure to white light on the intra-ocular pressure in glaucoma patients was studied. Lights of 100, 500, 1500 and 4500 lux were produced, the brightness varying from 2 to 90 ft.-L. Intra-ocular pressure was measured with Maklakov's tonometer. Forty-one glaucoma patients and 4 control subjects were examined. In healthy persons lights of various brightnesses and different periods of exposure did not exercise any influence on the intra-ocular pressure. In patients with an early subcompensated glaucoma a hypotensive effect was observed on exposure to light for 15, 30 and 45 min., the brightness being 10, 30 and 90 ft.-L. Increase in brightness increased the hypotensive effect. This effect was more strongly pronounced in patients in the early stage of glaucoma than in an advanced stage. Light sensitivity was measured by Nagel's adaptometer in 32 patients (57 measurements). Light sensitivity was dependent on the degree of compensation of the process and on the stage of the disease. The higher the intra-ocular pressure and the more advanced the glaucomatous process, the lower was the light sensitivity. Comparison of light sensitivity with changes in ocular tension showed that the higher the level of light sensitivity, the more effective was the action of light. The author recommends the use of white light as a physiotherapeutic procedure in glaucoma cases. (S)

TSINTSADZE, V.I.

TSINTSADZE, V.I.

Correlation between the hypotensive effect of light and the state of light perception of glaucoma victims. Soob. AN Gruz. SSR 18 no. 1:109-115 Ja '57. (MLRA 10:5)

1. Tbilisskiy gosudarstvennyy institut usovershenstvovaniya vrachey. Predstavleno chlenom-korrespondentom Akademii K.P. Chikovani.

(GLAUCOMA)

TSINTSADZE, V.S.

Trace elements in renal and urinary calculi. Soob. AN Gruz. SSR 27 no.1:33-37 Jl '61. (MIRA 16:8)

1. AN GruzSSR, Institut urologii, Tbilisi. Predstavleno akademikom AN GruzSSR A.P.TSulukidze.
(CALCULI, URINARY) (TRACE ELEMENTS)

TSINTSADZE, V.S.

Trace elements in the drinking water of Tiflis and other areas of Georgia. Soob.AN Gruz.26 no.1:23-26 Ja 61. (MIRA 14:3)

1. AN Gruzinskoy SSR, Institut urologii, Tbilisi. Predstavleno akademikom A.P. Tsulukidze.
(Georgia--Drinking water) (Trace elements)

TSINTSADZE, V.V.

Local application of cold in inflammatory hyperemia. Soob. AN Gruz. SSR 29 no.2:229-234 Ag '62. (MIRA 18:3)

1. Tbilisskiy gosudarstvennyy meditsinskiy institut. Submitted July 19, 1961.

TSINTSADZE, V.V.

Effect of hexonium on the vessels of inflamed tissues. Soob. AN Gruz. SSR 35 no.3:713-720 S '64. (MIRA 17:11)

1. Institut fiziologii AN GruzSSR. Predstavleno chlenom-korrespondentom AN GruzSSR A.N. Bakuradze.

TSINTSADZE, Ye.D.

Filariasis of the upper eyelid in man. Vest. oft., Moskva 32 no.3: 28-29 May-June 1953. (CIML 25:1)

1. Of the Eye Clinic (Director -- Prof. I. A. Sikharulidze), Tbilisi Medical Institute.

DZIDZIGURI, A.A.; TSINTSADZE, Yu.D.

Relationship between the generation of gas from stopes and the production processes in the Tkibuli coal deposit. Trudy Inst.gor.dela AN Gruz.SSR 2:133-147 '60. (MIRA 14:10)
(Tkibuli region--Stoping (Mining))

DZIDZIGURI, A.A.; TSINTSADZE, Yu.D.

Gas factor of the Tkibuli-Shaori coal deposit. Soob.AN Gruz.SSR 25 no.5:579-585 N '60. (MIRA 14:1)

1. Akademiya nauk GruzSSR, Institut gornogo dela imeni G.A.TSulukidze, Tbilisi. Predstavleno chlenom-korrespondentom Akademii F.N. Tavadze.
(Georgia—Coal mines and mining)
(Gas, Natural)

TSINTSERLING, A.V.; POLONSKAYA, Ye.V.; TARASOVA, A.P.; LYUBAVIN, A.R.; NABOKOVA, Ye.R.; MASLENNIKOVA. L.K.; MAYOROVA, L.P. (Leningrad)

Pathological anatomy of adenovirus lesions of the lungs in children. Arkh. pat. 27 no.10:21-28 '65. (MIRA 18:10)

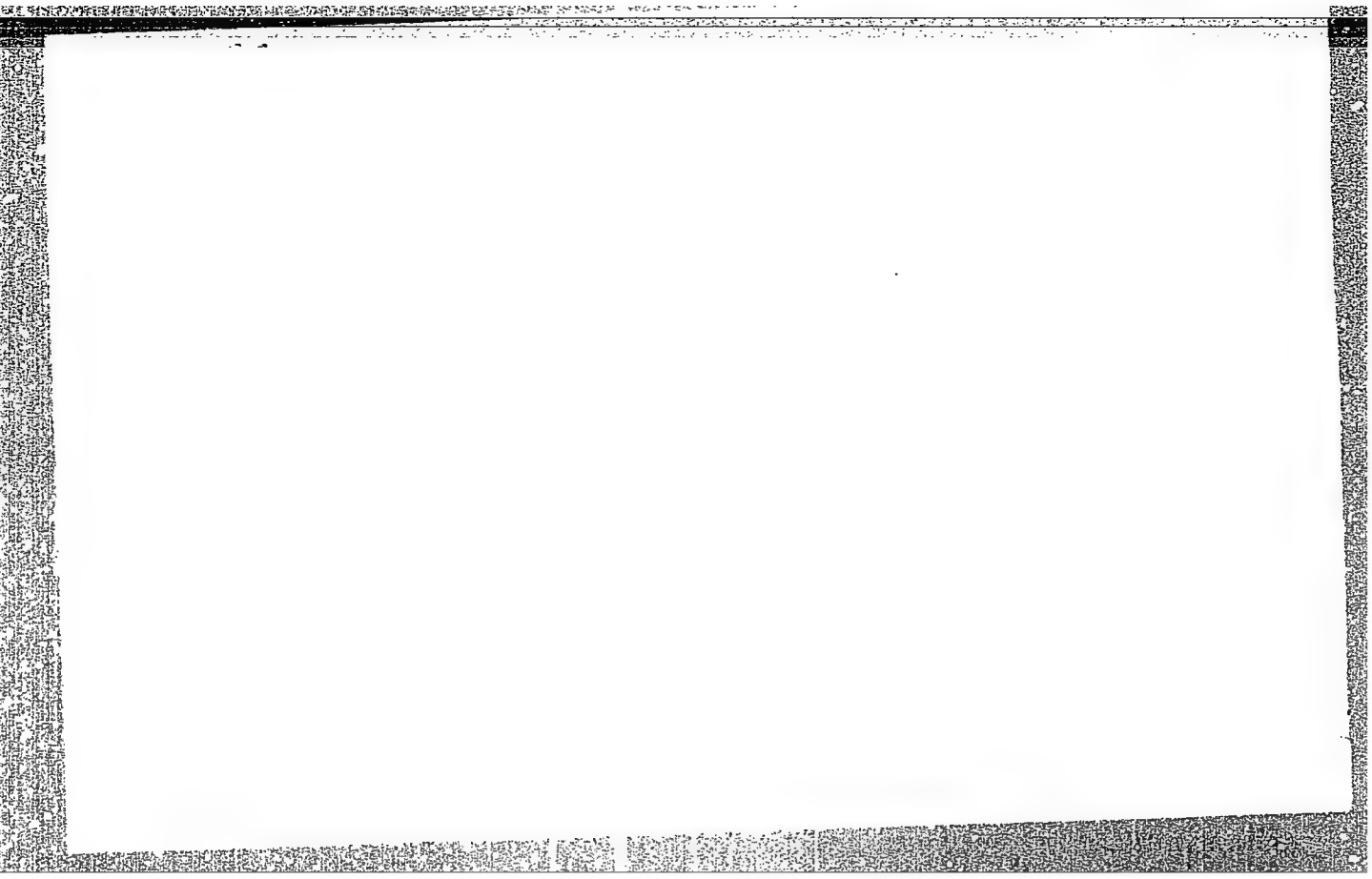
1. Institut detskikh infektsiy i Institut imeni Pastera, Detskaya bol'nitsa imeni N.F.Filatova, Detskaya bol'nitsa imeni Simbalina i 1-ya detskaya bol'nitsa Oktyabr'skogo rayona, Leningrad.

STANCHEVA, St.; ALIMARIN, I.; TSINTSEVICH, E.

Behavior of indium in solutions containing sulfate ions, studied by the method of ion exchange. Pt. 2. Godishnik khim tekh 8 no.2:17-23 '61 [publ. '62].

TSINTSEVICH, E.; STANCHEVA, St.; ALIMARIN, I.

Behavior of indium in sulfate-ion solutions studied with the ion-exchange method. Godishnik khim tekh 8 no.1:89-97 '61 [publ. '62].



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IIA

Amino acids in the silk fibroin of the mulberry and oak silkworms. E. P. Tsintsevich and M. M. Botvinik (Moscow State Univ.). *Zhur. Priklad. Khim.* **23**, 750-3(1950); *J. Applied Chem. U.S.S.R.* **23**, 783-6(1950)(Engl. translation).—While the ratio of NH_3 and NH_2 to total N (as a measure of the extent of hydrolysis) for fibroin (I) from mulberry silkworms (Central Asian Ascoli breed) is 90.8% after hydrolysis for 36 hrs. with 10-fold wt. of 25% H_2SO_4, for I from oak silkworms the ratio is only 30.0% though concd. HCl hydrolyzes the latter 97.3% (no temps. given in any case). Total N of the mulberry silkworm I was found to be 17.93%, dry basis, and values for the oak silkworm I preps. varied from 18.45 to 18.98%. Amino acids of I from mulberry silkworm and oak silkworm I (expressed in percentage) were, resp.: glycine 35.5, 18.9-19.2; alanine 25.4, 34.6-35.8; serine 11.2, —; threonine 1.9, —; phenylalanine 1.3, 0.6-0.7; tyrosine 12.2, 9.2 9.6; tryptophan 0.6, 1.4-2.1; glutamic acid 0.8, 5.6; histidine 0.2, 0.8-1.9; lysine 0.3, and 7.6-7.9.

James P. Danehy

TSINTSEVICH, V.M.; KOMCHENKO, G.P.; VOVCHENKO, G.D.

Electrochemical reduction of butyne-1,4-diol on a platinum electrode-catalyst. Elektrokhimiia 1 no.8:928-932 Ag '65. (MIRA 18:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

KHOMCHENKO, G.P.; TSINTSEVICH, V.M.; VOVCHENKO, G.D.

Catalytic hydrogenation and electrolytic hydrogenation of butynediol and its homologs. Zhur. fiz. khim. 38 no.2:496-500 F '64. (MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

TSINTSEVICH, V.M.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Influence of the structure of organic substances on their reduction and adsorption. Vest.Mosk.un. Ser.2:Khim. 18 no.1:27-31 Ja-F '63. (MIRA 16:5)

1. Kafedra obshchey khimii Moskovskogo universiteta.
(Chemical structure) (Reduction, Electrolytic)

KHOMCHENKO, G.P.; GRISHINA, T.M.; KRASNIKOVA, L.Ya.; PLETYUSHKINA, A.I.; TSINTSEVICH, V.M.; VOVCHENKO, G.D.

Behavior of certain organic substances in hydrogenation reactions on platinum andrhodium catalyst electrides. Vest. Mosk. un. Ser. 2: Khim. 15 no.6:30-32 N-D '60. (MIRA 14:2)

1. Kafedra obshchey khimii Moskovskogo universiteta.
(Hydrogenation) (Platinum) (Rhodium)

TSINTSEVICH, V.M.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Adsorptive capacity and the interaction of butynediol and its homologs with the electrode-catalyst. Zhur. fiz. khim. 38 no.9:2305-2309 S '64. (MIRA 17:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

KHOMCHENKO, G.P.; GRISHINA, T.M.; KRASNIKOVA, L.Ya.; PLETYUSHKINA, A.I.; TSINTSEVICH, V.M.; VOVCHENKO, G.D.

Behavior of adsorbed hydrogen in reactions of hydrogenation of organic substances on platinum and rhodium electrodes-catalysts. Part 1. Vest. Mosk. un. Ser. 2: Khim. 15 no.5:39-46 S-O '60. (MIRA 13:11)

1. Moskovskiy gosudarstvennyy universitet, kafedra obshchey khimii.
(Hydrogen) (Hydrogenation)

TSINTSEVICH, V.M.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Study of the adsorption and reduction of butynediol on a platinum catalyst. Vest.Mosk.un.Ser.mat.,mekh.,astron.,fiz.,khim. no.6: 205-209 '59. (MIRA 13:10)

1. Kafedra obshchey khimii Moskovskogo universiteta.
(Butynediol)

69793

S/055/59/000/06/25/027
B004/B002

5.1190

AUTHORS: Tsintsevich, V. M., Khomchenko, G. P., Vovchenko, G. D.

TITLE: Processes of Adsorption and Reduction of Butinediol[1] on a Platinum Catalyst

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, No. 6, pp. 205 - 209

TEXT: Experiments were conducted by means of an electrode of finely disperse platinum deposited on platinum. The actual surface of the electrode was 33,000 cm^2. The adsorption capacity of hydrogen was $2.7.10^{-5}$ gram-atoms in 0.1 N HBr, and 38% of the catalyst were covered with H_2. Fig. 1 shows the course of the butinediol adsorption on the degasified catalyst surface (Curve I), and the reduction of butinediol by means of the hydrogen layer adsorbed on the catalyst (Curve II). Assuming that the potential difference $\Delta\varphi$ in the first approximation is proportional to the adsorption Fig. of butinediol molecules, the kinetic curve of the adsorption of organic substance was determined (Fig. 3, Curve I) by means of the charge curve of Fig. 2. The potential shift shows that butinediol is deposited on the electrode with the negative end of its dipole. The dipole moment μ was

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Processes of Adsorption and Reduction of Butinediol on a Platinum Catalyst

found to be $1.2.10^{-18}$ absolute electrostatic units. The reduction course given in Fig. 3, curve II, shows that the adsorption and reduction rates differ but little, so that the former may have a limiting effect. Fig. 4 shows the reduction of butinediol by means of adsorbed hydrogen, and its electrolytic reduction. In both cases the H adsorbed enters into reaction. Fig. 4 shows that only 55% of the H adsorbed is strongly active (has a low binding potential), whereas 26% are less active and 19% inactive. The influence of catalyst poisons (As, Hg) on the course of reduction will be published later on. There are 4 figures and 5 Soviet references.

ASSOCIATION: Kafedra obshchey khimii (Chair of General Chemistry)

SUBMITTED: July 7, 1959

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S/189/63/000/001/005/008
D204/D307

AUTHORS: Tsintsevich, V. M., Khomchenko, G. P. and Vovchenko, G. D.

TITLE: The effect of the structure of organic compounds on their reduction and adsorption

PERIODICAL: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 1, 1963, 27-31

TEXT: The reduction and adsorption properties of butynediol-1,4 (I), tetramethylbutynediol-1,4 (II) and 1,4-dimethyl-1,4-diethylbutynediol (III) were studied in 0.1N H_2SO_4, using a platinized Pt electrode which also served as a catalyst (true surface 17000 cm^2). 83% of the electrode surface was covered with atomic hydrogen. It was found that the rates of catalytic reduction of I, II and III in the adsorption layer of hydrogen and of electroreduction decreased in the order I > II > III. The rates of electroreduction were very low but increased rapidly as the electrode potential became less positive (i.e. with a decrease in the adsorption potential

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The effect of the ... S/189/63/000/001/005/008
D204/D307

of hydrogen). Adsorption of I, II, and III on degassed electrode, at 0.6 V, and reaction with atomic hydrogen showed that both the adsorption ability and reactivity w.r.t. hydrogen decreased in the order I > II > III. There are 7 figures and 2 tables.

ASSOCIATION: Kafedra obshchey khimii (Department of General Chemistry)

SUBMITTED: May 22, 1961

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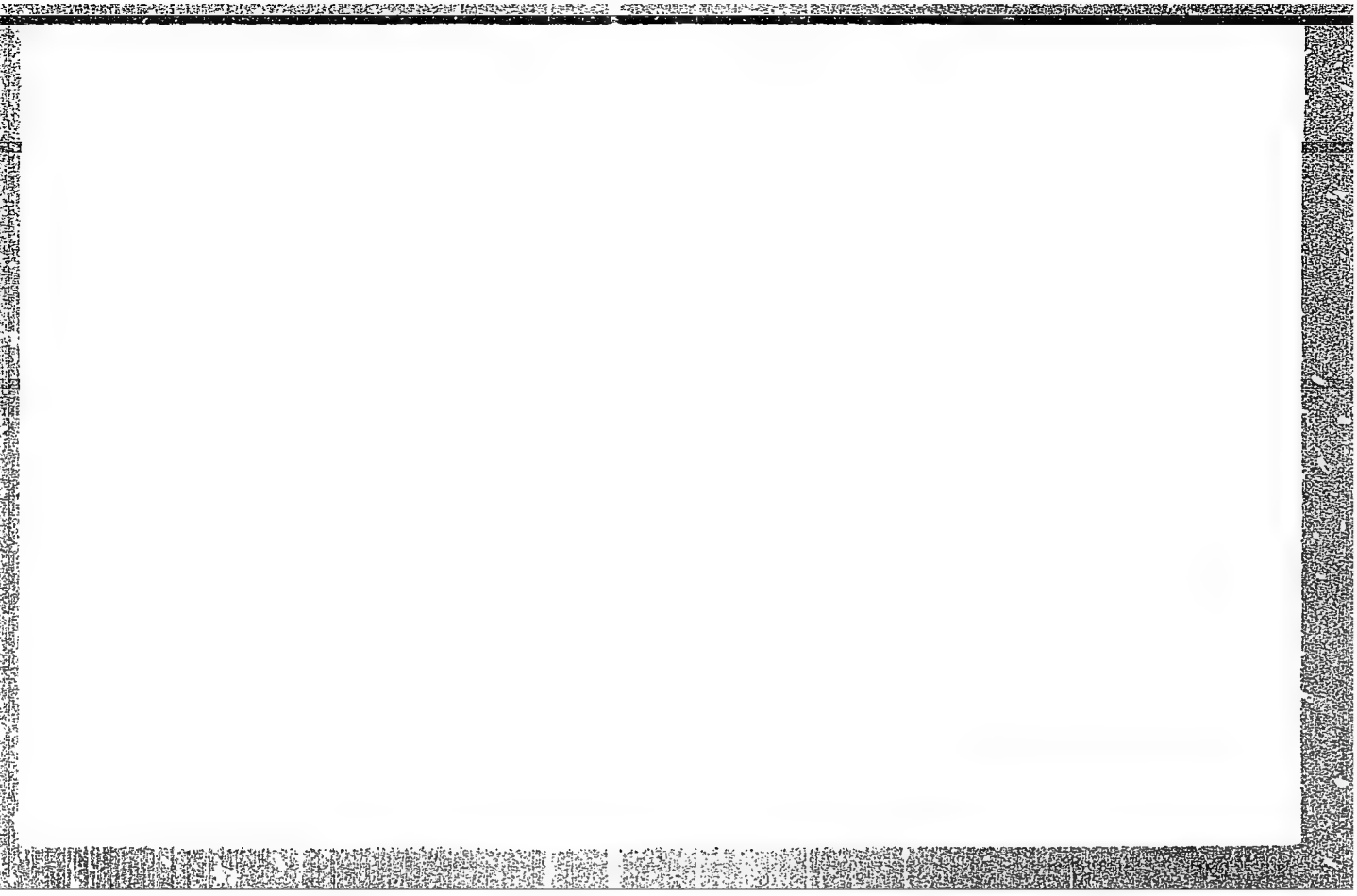

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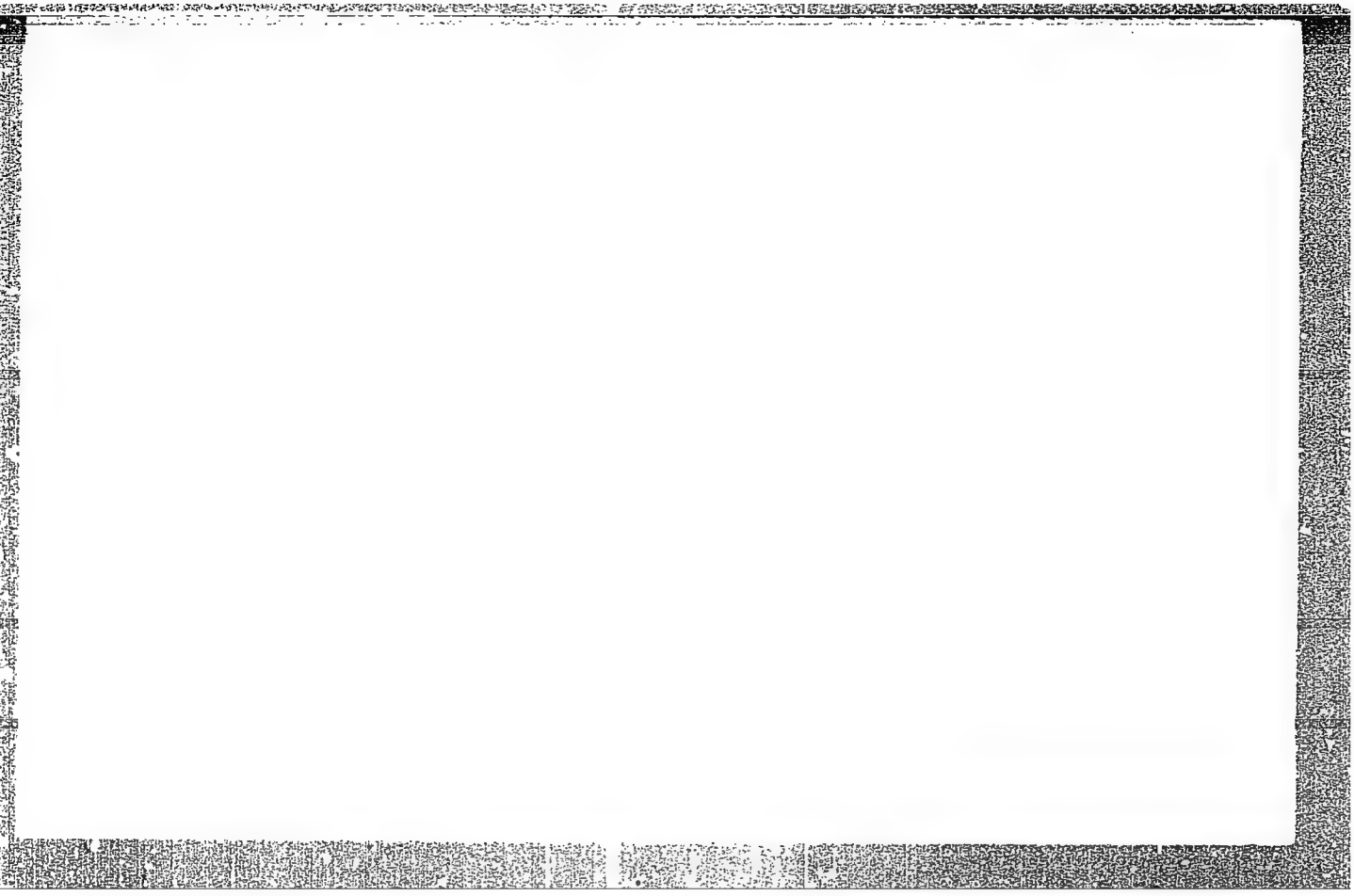

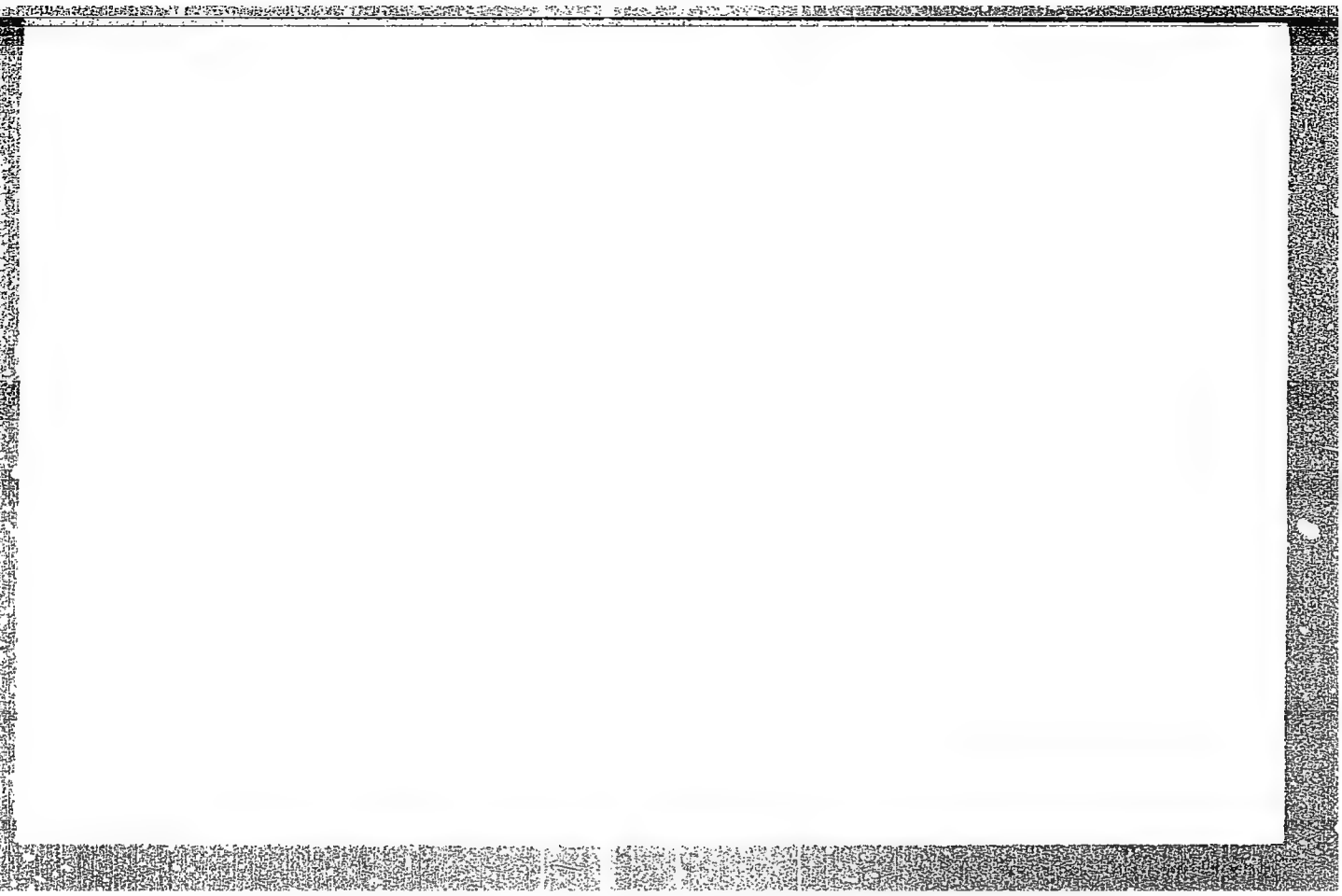

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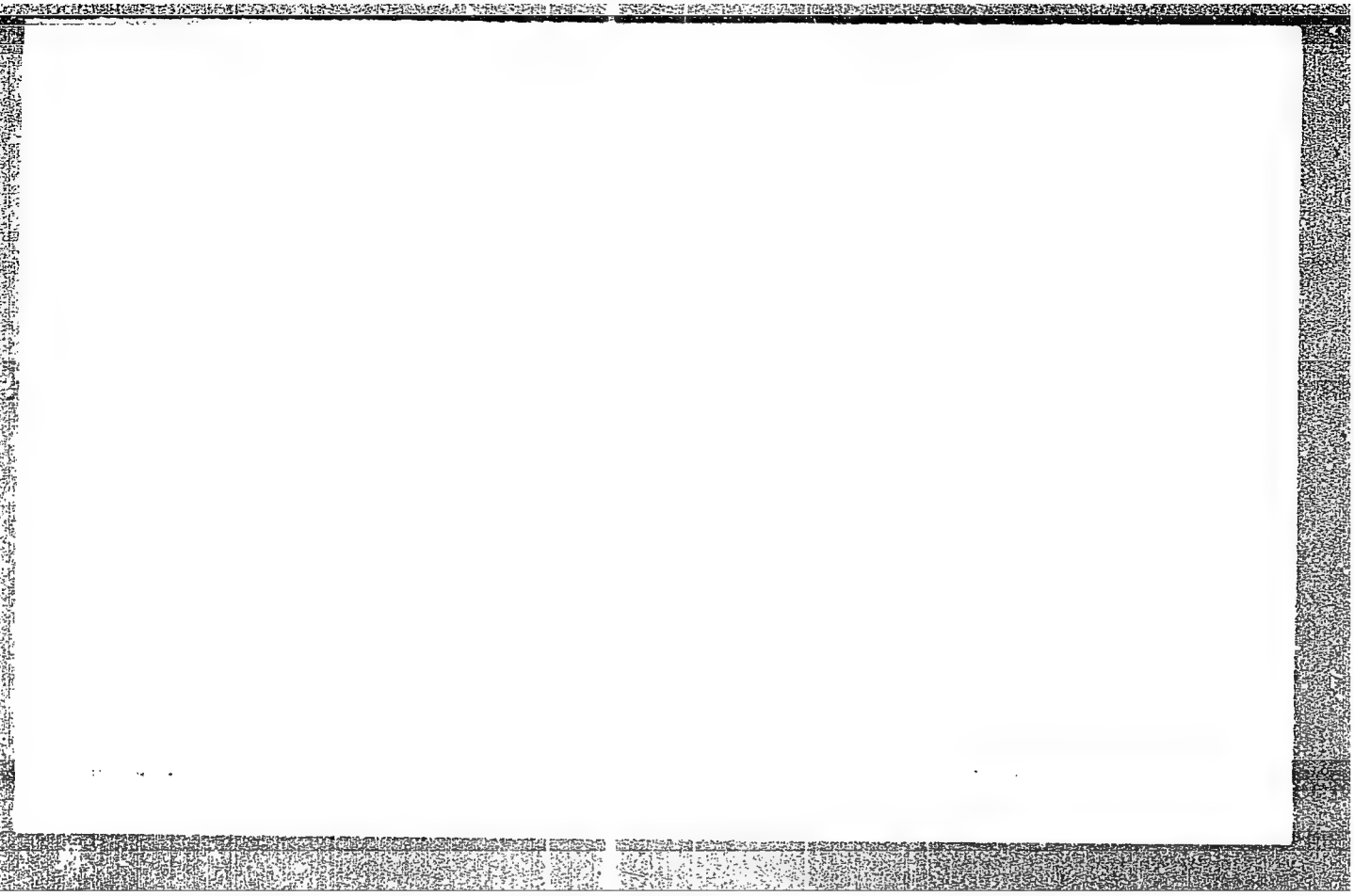

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ALTMARIN, I.P.; TSINTSEVICH, Yu.G.; GOROKHOVA, A.N.

Ion-exchange behavior of gallium on a strong acid cation exchanger in hydrochloric alcohol media. Vest.Mosk.un.Ser.2:Khim. 19 no.4:44-46 Jl-Ag '64. (MIRA 18:8)

1. Kafedra analiticheskoy khimii Moskovskogo universiteta.

ALIMARIN, I.P.; TSINTSEVICH, Ye.P.; GOROKHOVA, A.N.

Behavior of complex compounds of gallium and zinc in ammonium carbonate solution on ion exchange resins. Quantitative separation of gallium from zinc. Vest. Mosk un. Ser. 2: Khim. 15 no.4:46-51 Jl-Ag '60. (MIRA 13:9)

1. Kafedra analiticheskoy khimii Moskovskogo universiteta.
(Gallium compounds) (Zinc compounds)

TSINTSEVICH, Ye.P.;ALIMARIN, I.P.;NIKOLAYEVA, L.I.

Sorption of indium by ion-exchange resins from solutions containing hydrohalic acids. Vest Mosk. un. Ser. mat., mekh., astron., fiz., khim. 14 no.2:189-197 '59 (MIRA 13:3)

1. Kafedra analiticheskoy khimii Moskovskogo gosuniversiteta.
(Indium) (Hydrogen halides)

S/032/62/028/002/004/037
B101/B110

AUTHORS: Stancheva, St., Alimarin, I. P., and Tsintsevich, Ye. P.

TITLE: Separation of indium from zinc in solutions containing sulfate ions, by means of ion exchange

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 2, 1962, 156 - 158

TEXT: The behavior of In on ion exchange resins was studied. The solutions investigated also contained sulfates of Li, Na, K, NH_4, Mg, and free H_2SO_4. For cationites it was found that In sorption on the resin decreased with increasing concentration of sulfate ions, and the In remained completely dissolved at a certain concentration. Anionites sorbed the In completely at sufficiently high sulfate ion concentration. In 0.1 - 7 M H_2SO_4, In was not sorbed either by cationites or by anionites. On the basis of these results, a method was elaborated for separating In from Zn. Indium and zinc salts (ratio In:Zn = 1:100 or 1:1000) in solutions containing 0.5 M $(NH_4)_2SO_4$ were separated by an ЭДЭ-10П (EDE-10P) anionite. The solution

was adjusted to pH ≈9 by means of NH_3. No precipitate fell out owing to low In concentration. The solution was then passed through the column at a rate of 3 ml/min. Zn was eluted by a 0.5 M solution of $(NH_4)_2SO_4$ + NH_3, and determined either complexonometrically (with eriochrome black T as indicator) or gravimetrically as zinc anthranilate. In was eluted by means of HNO_3 and determined complexonometrically (pyridyl-(2-azo-4)-resorcin as indicator). At a ratio In:Zn = 1:1000, the values for Zn were about 4% low since the resin retained some Zn. In acid solution (0.35 M $(NH_4)_2SO_4$ + 0.01 M H_2SO_4), solutions of Zn and In (ratio Zn:In = 1:1000 or 1:10,000) may be separated by a ky-2 (KU-2) cationite. In remains as complex anion in solution and is titrated complexonometrically. Zn can be eluted with 2 N HCl and, after removal of HCl, it can be determined colorimetrically by dithizon. The Zn and In content found agreed with the amounts of Zn and In added to the solution. There are 4 tables and 6 references: 5 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: Kuang Lu Cheng, Anal. Chem., 27, 10, 1582 (1955).

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